EXECUTIVE SUMMARY

This component of the Comprehensive State Water Plan is prepared for the Snake River from Milner Dam to King Hill, Idaho, defined locally as the Middle Snake (Figs. 1-2), by the Idaho Water Resource Board in keeping with their constitutional and legislative charge to formulate and implement a State Water Plan. The Idaho Legislature directed the Board to place the Snake River from Section 5, Township 11 South, Range 20 East, B.M. to King Hill under interim protection, with the goal of identifying in the planning process whether or not the reach deserved designation as part of a state protected rivers system. For hydrologic congruity, the geographic delineation of the plan was extended upstream to Milner Dam.

The Middle Snake reach is visually delineated by the Snake River canyon, a deep, often vertical walled canyon cut through successive basalt flows, with numerous springs which issue through the canyon walls. Water flow through the reach is dependent on Milner Dam releases and discharge from the Snake River Plain Aquifer. Irrigation diversions at Milner Dam diminish summer flows at the upper end of the reach, but tributary springs maintain a relatively secure flow from the backwaters of Upper Salmon Falls Reservoir to King Hill.

Agriculture is the predominant industry of the region. Over the years, many water supply projects in the region have been built by private individuals and non-profit irrigation companies which rely on Snake River flows. At the eastern end of the reach, farming activities are tied to irrigation canals on the Snake River Plain, with grazing use more prevalent adjacent to the river. In the canyon, benches provide limited opportunities for development and grazing. Much of the land adjacent to the river is undeveloped.

As one travels downstream, more mixed land uses are found because of increased water availability from springs and tributaries, and an expansion of the river floodplain. Development along the river is primarily for aquaculture, residences, recreation facilities, and pasture. Aquaculture facilities are prevalent between Crystal Springs and Hagerman. Residential development within the canyon and along the canyon rim occurs from Shoshone Falls downstream to the town of Bliss. Substantial hydropower developments, operated by Idaho Power Company and many private owners, have been built along the reach.

Pressure for future water development projects along the reach can be expected with projected growth. However, development in the reach is constrained by upstream water rights, critical groundwater management areas, the Swan Falls Agreement, and minimum flows.

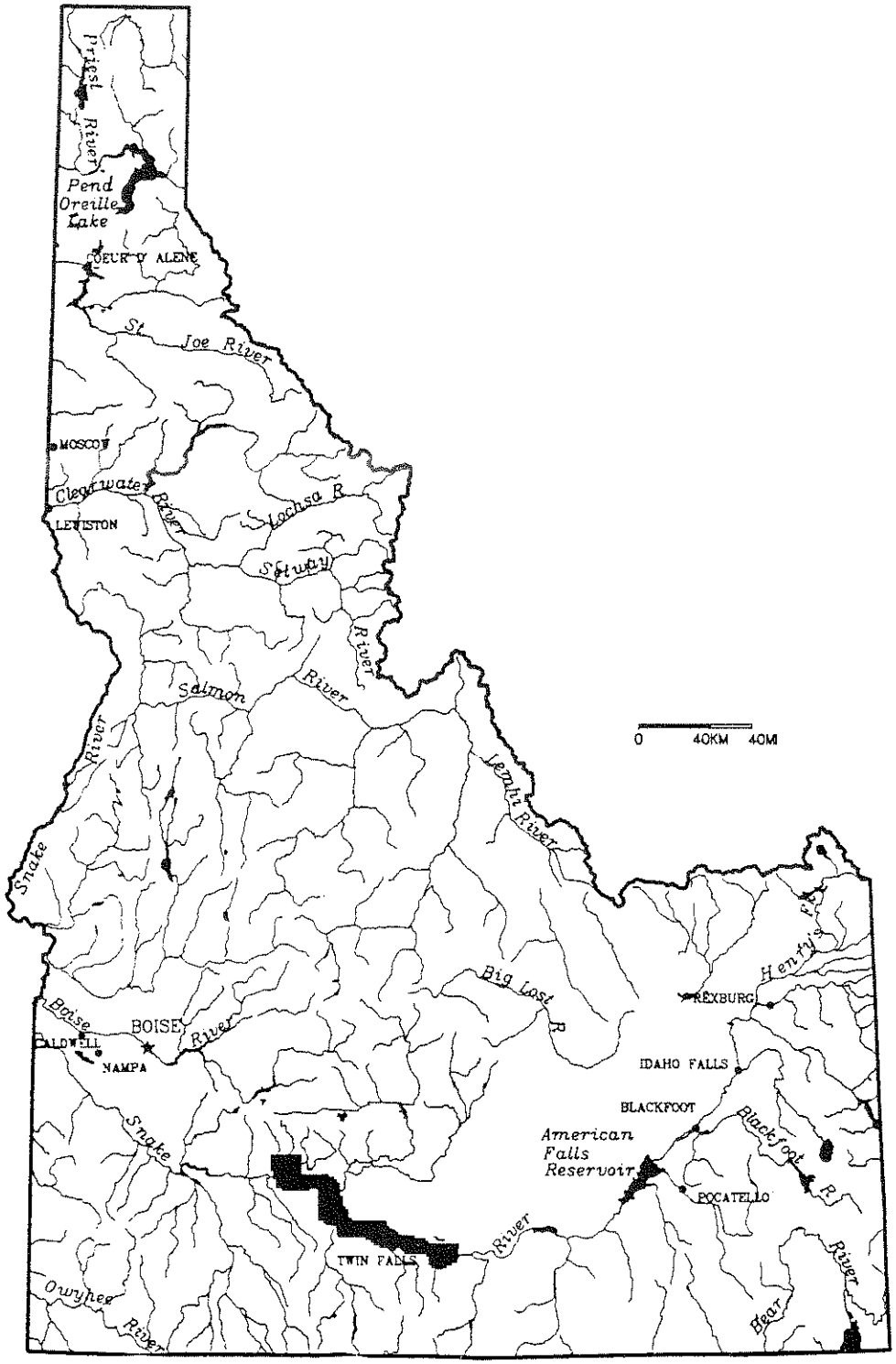

Figure 1. Location of Middle Snake reach

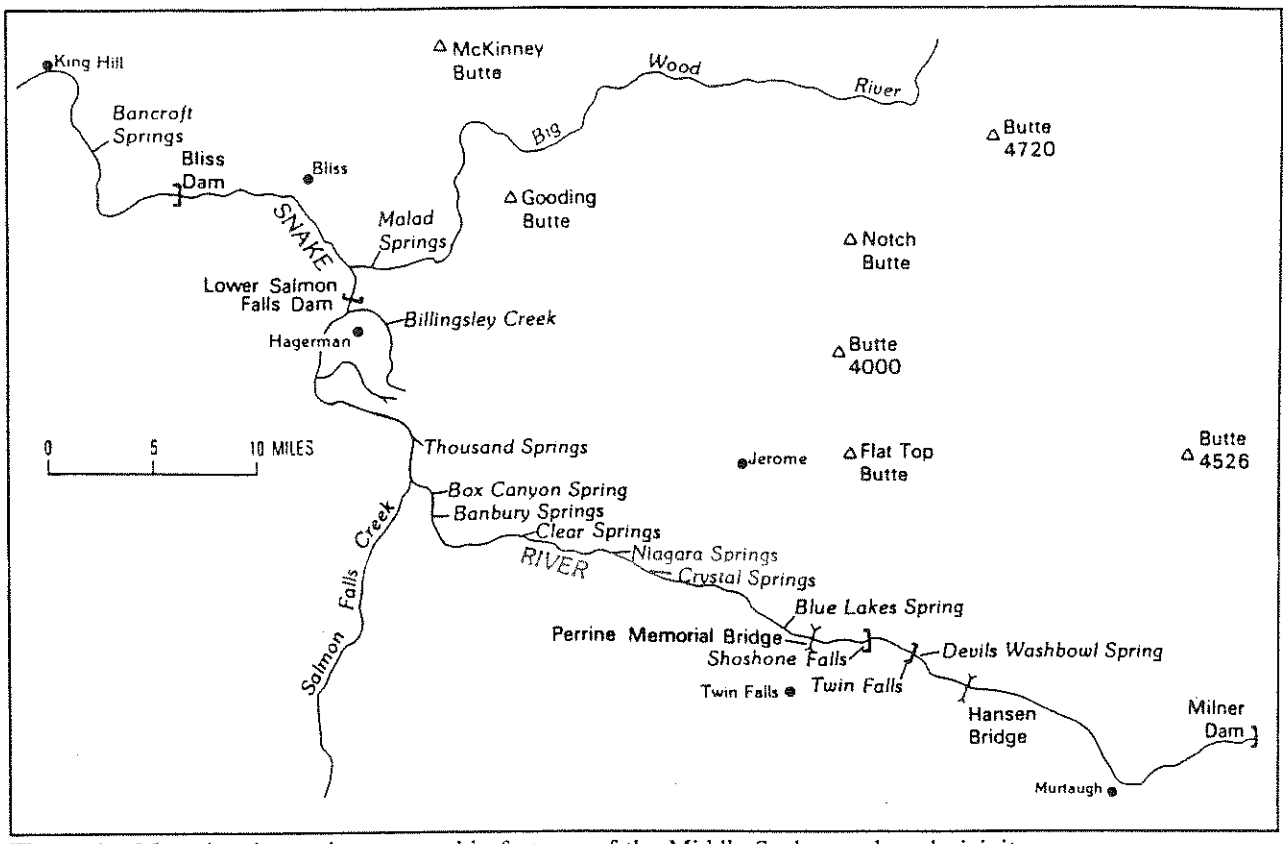

Figure 2. Map showing major geographic features of the Middle Snake reach and vicinity.

An overwhelming concern about water quality has been expressed by residents of the area. Water quality problems in the Middle Snake reach are the consequence of low water flows and nutrient and sediment loading from agricultural runoff, hatchery discharge, municipal effluent, and degradation of inflowing groundwater. Water quality degradation detracts from the scenic character of the Snake River canyon, limits recreational opportunities on the river, and threatens diversions for beneficial uses in and downstream of the Middle Snake reach. The quality of fisheries, wetlands, and wildlife in the Middle Snake reach has declined and will continue to decline under present conditions.

Based on local concern, the single overriding consideration in developing a comprehensive plan for this reach of river is water quality. Forestalling or reversing environmental degradation cannot be realized as long as the Snake River resources are allocated on a piecemeal basis. More attention needs to be paid to cumulative impacts, the assimilation capacity of the river, and coordinated allocation of water resources, both ground and surface water. Public comments also indicate a desire to minimize additional visual changes to the river canyon, particularly in natural or undeveloped areas. To accomplish this objective, visual changes in remaining free-flowing sections of the river and other natural landscapes must be minimized.

Designations

In planning for the use of the water resources of the state, the Water Resource Board is charged with weighing and balancing competing uses and needs. Multi-objective resource planning necessarily involves making trade-offs aimed at achieving the greatest number and best combination of objectives, based upon the overall goals of planning.

No action by the Board would not support the coordinated efforts of local government to improve the water quality of the Middle Snake reach. The Board believes State protected river designations are preferable to federal protection, and are in the best interest of the residents of the State of Idaho. Federal protection limits the flexibility of planning for the reach, and removes the option of amending the designation by action of the Water Resource Board and the Idaho Legislature.

Actions of the Board are consistent with the Idaho Code, private property rights, local and state management plans, the local *Coordinated Water Resource Management Plan for the Middle Snake River* adopted by Gooding and Jerome counties, and public comment garnered at the Public Scoping meetings, through the local Advisory Group, and the public hearings. The Board considered impacts of protection, improvement, and development on the social, economic, and environmental livelihood of the region, and makes the following designations and recommendations in the public interest.

In order to protect current resource use, and the multiple-use character of the Middle Snake reach, and recognizing that no action by the Idaho Water Resource Board using their comprehensive water planning authorities can interfere with vested rights, or the repair, replacement, or continued operation of existing facilities or works, the Idaho Water Resource Board takes the following action (Fig. 3):

1) Designates the Snake River from the downstream project boundary of the Milner Hydroelectric Project, (approximately 700 feet downstream from the Idaho Power Company main Milner powerhouse), River Mile 637, to a point 100 feet downstream of the Murtaugh Bridge "Recreational" (7 miles). Within the segment the Board prohibits construction or expansion of dams or impoundments; construction of hydropower projects; and mineral or sand and gravel extraction. Within the stream channel, alterations would be prohibited except those necessary (1) to maintain and improve existing utilities, roadways, diversion works, fishery enhancement structures, and stream access facilities; (2) for the maintenance of private property; (3) for new diversion works; and (4) for construction of new public access facilities and fishery enhancement structures. Construction of private river access facilities (i.e., boat docks) may be allowed with Idaho Water Resource Board and other regulatory agencies' approval. New diversion works are limited to pump installations which do

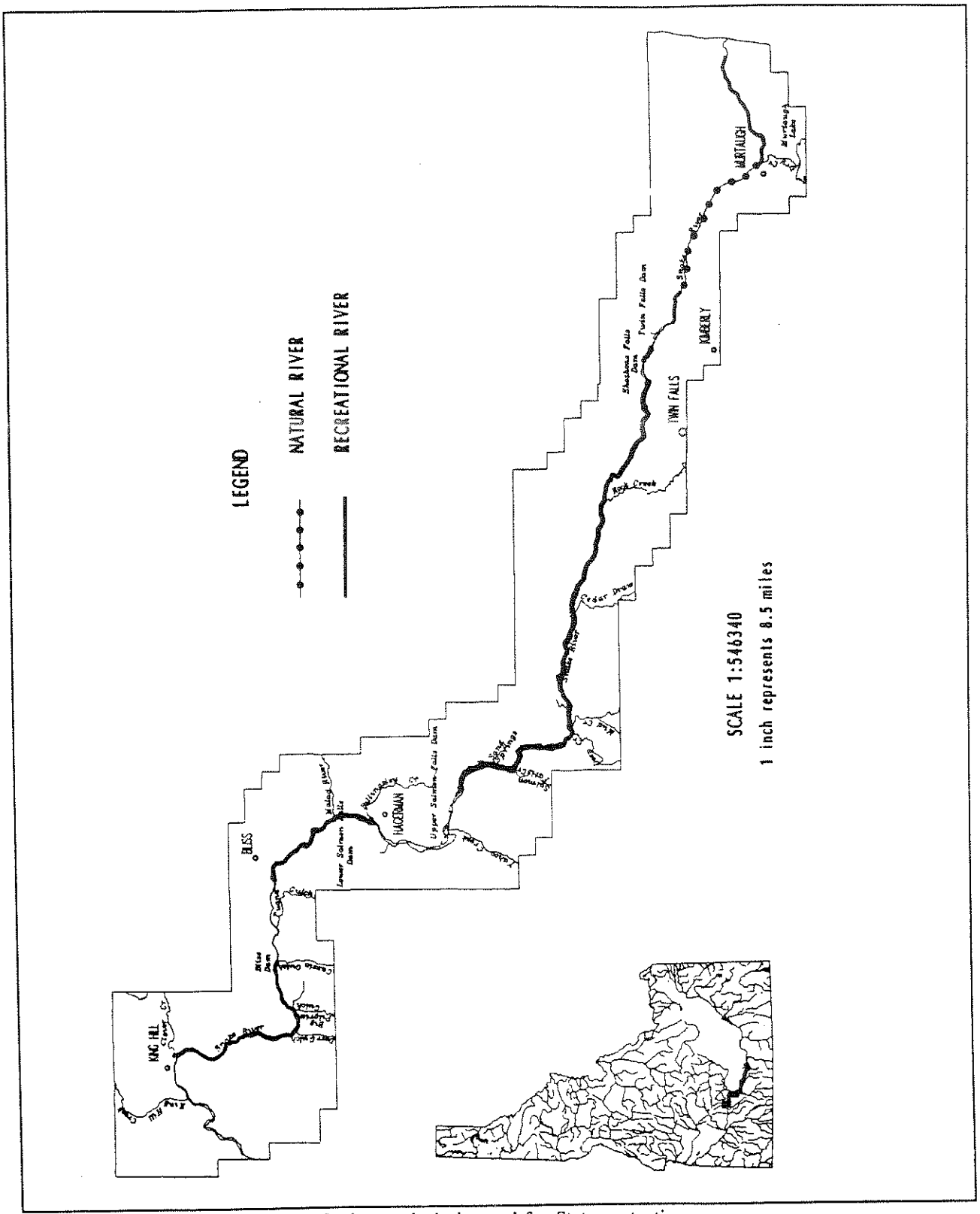

Figure 3. Segments of the Middle Snake reach designated for State protection.

not create an obstruction in the river; are to supply water for domestic, commercial, or municipal uses; are visually blended with the surroundings so as to be less noticeable from the river; and are constructed to minimize harm to fish and wildlife.

2) Designates the Snake River 100 feet downstream of the Murtaugh Bridge to a point 100 feet upstream of the Hansen Bridge as "Natural" (9.5 miles). Within the segment the Board prohibits construction or expansion of dams or impoundments; construction of hydropower projects; construction of water diversion works; dredge or placer mining; alterations of the stream bed; and mineral or sand and gravel extraction within the stream bed.

3) Designates the Snake River 100 feet upstream of Hansen Bridge to the upstream project boundary of Twin Falls Hydroelectric Project [River Mile 619.5, the east boundary of Lot 5, Section 10, T10S, R18E, B.M.] "Recreational" (2 miles). Within the segment the Board prohibits construction or expansion of dams or impoundments; construction of hydropower projects; and mineral or sand and gravel extraction. Within the stream channel, alterations would be prohibited except those necessary (1) to maintain and improve existing utilities, roadways, diversion works, fishery enhancement structures, and stream access facilities; (2) for the maintenance of private property; (3) for new diversion works; and (4) for construction of new public access facilities and fishery enhancement structures. Construction of private river access facilities (i.e., boat docks) may be allowed with Idaho Water Resource Board and other regulatory agencies' approval. New diversion works are limited to pump installations that do not create an obstruction in the river; are to supply water for domestic, commercial, or municipal uses; are visually blended with the surroundings so as to be less noticeable from the river; and are constructed to minimize harm to fish and wildlife.

4) Designates the Snake River from the downstream project boundary of the Twin Falls Hydroelectric Project [River Mile 617] to the confluence of the westerly spring flow from the Devil's Corral spring area [River Mile 616] "Recreational" (1 mile). State protection of this segment shall in no way impede relicensing of the Shoshone Falls Hydroelectric Project, or an expansion of the Shoshone Falls Hydroelectric Project boundary that would not result in any change in the size of the impoundment or in reservoir elevation. Within the segment the Board prohibits construction or expansion of dams or impoundments; construction of hydropower projects; and mineral or sand and gravel extraction. Within the stream channel, alterations would be prohibited except those necessary (1) to maintain and improve existing utilities, roadways, diversion works, fishery enhancement structures, and stream access facilities; (2) for the maintenance of private property; (3) for new diversion works; and (4) for construction of new public access facilities and fishery enhancement structures. Construction of private river access facilities (i.e., boat docks) may be allowed with Idaho Water Resource Board and other regulatory agencies' approval. New diversion works are limited to pump installations which do not create an obstruction in the river; are to supply water for domestic,

commercial, or municipal uses; are visually blended with the surroundings so as to be less noticeable from the river; and are constructed to minimize harm to fish and wildlife.

5) Designates the Snake River from River Mile 614.4 (approximately 800 feet downstream from the Shoshone Falls powerhouse) to the Highway 30 Bridge "Recreational" (32 miles). The licensed Auger Falls Hydroelectric Project, FERC #4797, is exempt from the prohibitions of this designation. A permit to appropriate water for the Boulder Rapids Hydroelectric Project, FERC #10772, was approved in May 1984 with extensions for proof of beneficial use authorized in 1989 and 1993. A public hearing, held in response to a request for exemption from interim protection designation prohibitions, identified significant public concern that the Boulder Rapids development would preclude or jeopardize existing beneficial uses. However, Idaho Code 42-1734F(1) states that prohibitions promulgated pursuant to State designation of protected rivers shall not limit, restrict, or conflict with approved applications for the appropriation of water.

Within the segment the Board prohibits construction or expansion of dams or impoundments; construction of hydropower projects; and mineral or sand and gravel extraction. Within the stream channel, alterations would be prohibited except those necessary (1) to maintain and improve existing utilities, roadways, diversion works, fishery enhancement structures, and stream access facilities; (2) for the maintenance of private property; (3) for new diversion works; and (4) for construction of new public access facilities and fishery enhancement structures. Construction of private river access facilities (i.e., boat docks) may be allowed with Idaho Water Resource Board and other regulatory agencies' approval. New diversion works are limited to pump installations that do not create an obstruction in the river; are to supply water for domestic, commercial, or municipal uses; are visually blended with the surroundings so as to be less noticeable from the river; and are constructed to minimize harm to fish and wildlife.

6) Designates the Snake River from the downstream project boundary of the Lower Salmon Falls Hydroelectric Project [River Mile 573] to the upstream project boundary of the Bliss Hydroelectric Project [River Mile 565.5] "Recreational" (8 miles). Within the segment the Board prohibits construction or expansion of dams or impoundments; construction of hydropower projects; and mineral or sand and gravel extraction. Within the stream channel, alterations would be prohibited except those necessary (1) to maintain and improve existing utilities, roadways, diversion works, fishery enhancement structures, and stream access facilities; (2) for the maintenance of private property; (3) for new diversion works; and (4) for construction of new public access facilities and fishery enhancement structures. Construction of private river access facilities (i.e., boat docks) may be allowed with Idaho Water Resource Board and other regulatory agencies' approval. New diversion works are limited to pump installations that do not create an obstruction in the river; are to supply

water for domestic, commercial, or municipal uses; are visually blended with the surroundings so as to be less noticeable from the river; and are constructed to minimize harm to fish and wildlife.

7) Designates the Snake River from the downstream project boundary of the Bliss Hydroelectric Project [River Mile 560] to the confluence of Clover Creek "Recreational" (12 miles). Within the segment the Board prohibits construction or expansion of dams or impoundments; construction of hydropower projects; and mineral or sand and gravel extraction. Within the stream channel, alterations would be prohibited except those necessary (1) to maintain and improve existing utilities, roadways, diversion works, fishery enhancement structures, and stream access facilities; (2) for the maintenance of private property; (3) for new diversion works; and (4) for construction of new public access facilities and fishery enhancement structures. Construction of private river access facilities (i.e., boat docks) may be allowed with Idaho Water Resource Board and other regulatory agencies' approval. New diversion works are limited to pump installations that do not create an obstruction in the river; are to supply water for domestic, commercial, or municipal uses; are visually blended with the surroundings so as to be less noticeable from the river; and are constructed to minimize harm to fish and wildlife.

It is the policy of the Board to amend the water plan when it determines that amendments are in the public interest. The Board will consider proposals for amendment to the plan from private parties as well as state agencies. In the event the Board determines that a proposal will not substantially impair the values which were the basis of a protected river designation, the Board shall follow the procedures required for the adoption of the original plan (Sections 42-1734A and B, *Idaho Code*). In addition, the Board shall review and reevaluate the Comprehensive State Water Plan at least every five years (Section 42-1734B(7).

Plan Recommendations

The Middle Snake River reach receives major nutrient, sediment, bacteria, and chemical loadings from a number of sources. Studies attempting to quantify the impacts of existing impoundments, fish hatchery effluent, sewage outflows, and agricultural return flows must be supported and continued. Planning for the various uses of water requires an understanding of the water quality impacts of the different competing uses.

In order to address water quality standard violations on the Snake River, the Division of Environmental Quality has initiated development of a water quality management plan under the Idaho Nutrient Management Act (Idaho Code 39-105(3)(o)). At the core of the overall plan will be industry-specific nutrient management plans. These plans are to contain both short and long-term

actions, monitoring to demonstrate plan implementation and effectiveness, and mechanisms to ensure compliance.

- The Board supports development of a Nutrient Management Plan under the direction of the Division of Environmental Quality to improve water quality of the Middle Snake reach. The State's Water Pollution Control Account should be used to support planning, education, monitoring, and enforcement of water quality standards on the Middle Snake reach.

- The Board recommends studying methods for increasing flows during low-flow periods through the Middle Snake reach.

- The Board recommends examination of the need for additional protection of spring flows in a Snake River Plain Aquifer Plan, in light of concerns about reduced spring discharges into the Middle Snake reach, and declining ground water levels. The water quality and quantity aspects of conjunctively used stream-aquifer systems must also be understood.

It is the policy of the State of Idaho (Energy Plan, 1982) that private and public utility companies place a high priority on conservation, full development of generation at existing dams and hydropower facilities, and development of other renewable resources.

- The Board encourages the Idaho Public Utilities Commission to continue, through its regulatory authority, to encourage energy conservation and the commercialization of cost-effective alternative energy systems.

- The Board encourages the investigation of the feasibility of hydropower development on canals and return flows not associated with natural springs in the Middle Snake reach.

- The Board supports testing and implementation of new technology to increase hydropower potential.

Under the traditional form of ratemaking, a utility loses money for each kilowatt-hour conserved, even though conservation may be the utility's least-cost investment in the long term. If it reduces sales, a private utility loses some of the revenues it needs to cover fixed costs and pay a return to its stockholders. This effect creates a strong short-term disincentive to conservation, and an incentive to promote sales.

- The Board encourages the Idaho Public Utilities Commission to investigate regulatory models in which utility revenues and profits are linked to some measure other than kilowatt-hour sales, to remove financial disincentives that utilities face when they cost-effectively save kilowatt-hours.

Local counties of the Middle Snake region have worked hard to address problems related to water quality and water supply. Intergovernmental cooperation is crucial to planning and implementation of measures to develop, improve, and conserve the water resources of the region.

- The Board encourages cooperation with local government entities in identifying water distribution and water pollution problems.

- The Board encourages counties to more forcibly address the problem of unauthorized disposal of rubbish into the canyon.